4-05-10

ALABAMA DEPARTMENT OF TRANSPORTATION
VEHICLE SPECIFICATION TEXT

BID ITEM: CUTAWAY CHASSIS BUS-HEAVY DUTY

A heavy duty Cutaway type transit bus, Metal Body, 28-30 Passenger, State Purchasing Reference No.T-904.

The Alabama Department of Transportation (ALDOT) is soliciting bids for the vehicle designated as the bid item. These specifications are intended to provide the basic requirements for the vehicle described. It is not the intent of the specifications to restrict bids for any vehicle that will comply with the design features and functions described herein. These specifications are intended to meet the basic needs of the transit providers and insure the safety of the passengers.

The bids received must be based on the equipment and appurtenances described. Any variation proposed from the equipment and appurtenances must be equal to or better than the equipment shown in the specifications. ALDOT will make the final determination regarding the quality and cost of any alternatives proposed.

Each vehicle submitted by the successful bidder must meet, or exceed all of the specifications contained in this "invitation to bid" and must meet the requirements of the Americans with Disabilities Act, 49CFR, Part 38, Subpart B — Buses, Vans and Systems.

At the request of ALDOT, the manufacturer shall present test reports and/or certifications which substantiate the vehicle being offered complies with all Federal Motor Vehicle Safety Standards (FMVSS) and Environmental Protective Agency (EPA) emission standards.

The manufacturer shall present with bid a certified copy of full report indicating the vehicle meets all safety requirements based on tests performed at the Altoona Bus Testing Center.

SEATING FLOOR PLAN BID OPTIONS: (see diagram attached)

28-30 Passenger (213.5 Wheelbase)

FLOOR PLAN OPTION I **(Gasoline-No HAP):** As per the diagram.

FLOOR PLAN OPTION II **(Diesel-No HAP):** As per the diagram.

FLOOR PLAN OPTION III **(Gasoline- Handicapped** Accessibility Package **OS/2B)** As per the diagram.

FLOOR PLAN OPTION IV **(Diesel- Handicapped Accessibility Package OS/2B)** As per the diagram.

FLOOR PLAN OPTION V **(Gasoline- Handicapped Accessibility Package OS/4B):** As per the diagram.

FLOOR PLAN OPTION VI (Diesel- **Handicapped Accessibility Package OS/4B):** As per the diagram.

FLOOR PLAN OPTION VII **(Gasoline- Handicapped Accessibility Package OS/SP Flat Floor):** As per the diagram.

FLOOR PLAN OPTION VIII **(Diesel- Handicapped Accessibility Package OS/SP Flat Floor):** As per the diagram.

FLOOR PLAN OPTION IX **(Gasoline- Handicapped Accessibility Package ADAIOS-2B):** As per the diagram.

FLOOR PLAN OPTION X **(Diesel- Handicapped Accessibility Package ADA/OS-2B):** As per the diagram.

FLOOR PLAN OPTION XI **(Gasoline-Handicapped Accessibility Package OS/2B** (Wheelchair lift door located in between wheel axles immediately behind passenger entry door, 3 double 3-step foldaway flip seats): As per the diagram.

FLOOR PLAN OPTION XII **(Diesel-Handicapped Accessibility Package OS/2B** (Wheelchair lift door located in between wheel axles immediately behind passenger entry door, 3 double 3-step foldaway flip seats): As per the diagram

General Dimensions:

Seating Capacity	Approximately 28-30
Overall Length	Maximum – 396 inches
Overall Width	Maximum – 96 inches
Overall Height	Maximum – 122 inches
Interior Width (at seat cushion)	Minimum – 90 inches
Interior Height (at center aisle)	Minimum – 77 inches
First Step Height from Ground	Maximum – 12 inches

Step Riser Height	Maximum – 10 inches
Step/Tread Depth	Minimum – 9 inches
Floor Height from Ground	Maximum - 38.5 inches
Seat Width Seat	Minimum - 17.5 inches
Spacing Aisle	Minimum - 27.5 inches
Width	Minimum – 14 inches
Entry Door (clear opening width)	Minimum – 29 X 80 inches
Gross Vehicle Weight Rating (GVWR)	Minimum - 19,500 pounds
Wheelbase	213.5 inches
Fuel Tank Capacity (Largest OEM)	Min 45 gallons

The Alabama Department of Transportation will not allow any cutting of chassis for the purpose of increasing or decreasing the chassis length. This will be verified through serial number checks. The rear overhang, measured from the center of the rear axle to the outer edge of the rear bumper, cannot exceed 1/3 of the overall vehicle length. Rear frame extensions shall be Butt-welded with a continuous weld and shall exceed the requirements of the chassis manufacturer. Any vehicle that exceeds the OEM GVWR and/or GAWR will not be accepted. Further, the ALDOT will not allow re-certification of the chassis OEM GVWR and GAWR.

All vehicles shall be weighed "as built" before release and manufacturer's engineering department shall perform a four corner weight analysis on each vehicle that indicates the weight of the vehicle and any attachments, the maximum weight of the occupants, and the weight of a full tank of fuel for GAWR and GVWR evaluation. A copy of the "as built" weight certification, four corner weight analysis and an "as built" floor plan shall be on each vehicle shipped to ALDOT. The "as built" weight certification shall provide the following information:

- VIN of the bus
- Manufacturer
- Body SN
- A description (type) of the bus
- Date
- Number of ambulatory passengers including driver
- Number of wheelchairs
- Four wheel weight distribution of the actual completed weight of the vehicle including all attachments
- Four wheel weight distribution of the weight of the ambulatory passengers including driver
- Four wheel weight distribution of the weight of the
- wheelchairs
- Four wheel weight distribution of the weight of the fuel
- Four wheel weight distribution of the total weight of the vehicle. Weight analysis must have signature and title of person submitting it.

Chassis Related:

Chassis Type:

Freightliner MB55 (or approved equal; includes axle oil seals for front and rear axles.

Engine:

Gasoline Engine: Manufacturer's OEM 6.8L (or approved equal) capable of operating the vehicle at full capacity.

Diesel Engine: Manufacturer's OEM 6.7L (or approved equal) capable of operating the vehicle at full capacity; must be equipped with a block heater of a minimum of 1000 watts.

Fuel System:

60 gallon minimum, dual fuel tanks acceptable. Tank(s) to be internally baffled to prevent surging, along with a fuel/water separator (with diesel) and an engine mounted fuel filter with replaceable-type elements. If dual tanks are provided, they must be refueled through a single filler neck/opening on the vehicle. If dual tanks are provided, there must be no action required by the driver to switch between tanks.

Transmission:

The transmission shall be an automatic heavy duty 5 speeds Allison 2200 or approved equal. An auxiliary oil cooler is required. Transmission shift lever shall be interlocked with the engine starter motor to prevent engagement of the starter in a gear other than park or neutral. Driveshaft Guards required on each section of driveshaft.

Suspension: Front Axle: Minimum 7,000Ibs.1-Beam Rear Axle: 13,500 lbs. Manufacturer's heaviest duty front and rear suspension. Heaviest duty springs and shock absorbers must be adequate to match specified GVWR for fully loaded bus. Heavy duty rear stabilizer bars are required. A Hub-o-meter must be provided on the rear, curbside wheel hub.

Steering: The steering wheel shall be adjustable with soft rim. Steering column shall be tilting type with cruise control. All steering linkage with wear points, including tie rod ends.

Brakes: Bus must be equipped with both service and parking brakes that comply with FMVSS #105.

A) Service brakes - The service brakes shall be capable of stopping the vehicle from a speed of twenty (20) mph with a seated load of one hundred fifty (150) pounds per passenger at a rate of deceleration equivalent to a stop within twenty-two (22) feet. Brakes shall be OEM Anti lock brake system (ABS), hydraulic power-assist with hydraulic disc brakes and be adequate to the GVWR of the vehicle.

B) Parking brake - The parking brake shall be capable of holding a fully loaded vehicle on a 15% incline. The system shall incorporate

a warning light on the instrument panel to indicate to the driver when the brake is applied..

The controls for the wheel chair ramp shall be interlocked with the vehicle's parking brake and transmission to ensure the vehicle cannot be moved when the ramp is not stowed and so the ramp cannot be deployed unless the interlocks are engaged. The interlock must meet ADA Title 49 Lift Interlock requirements

Wheels: The bus shall have single front and dual rear wheels and comply with FMVSS 120. The wheels shall be of heaviest duty available, steel and be fully interchangeable. Wheel bearings shall be extra heavy duty. Wheels are to be 19.5 inches. A spare wheel and tire of the same size shall be provided to match other wheels/tires. All wheel rims are to be painted white on both sides.

Tires: Tires shall be tubeless steel-belted radial type. A spare tire of the same size and quality shall be properly mounted to wheel, balanced and mounted under rear of vehicle if possible. Spare shall be winch activated for ease if possible. Balancing and alignment verification **must** accompany each vehicle upon delivery.

Battery: Dual heavy duty, 12 volt, minimum 750 CCA (15000CA total) maintenance free types. The battery tray shall be treated for resistance to corrosion and shall be supported on a ball bearing slide mechanism. **Battery trays are required to be double locking.** The battery access door shall be lockable and located in the skirt area on a slide tray. One battery is to be wired strictly for starting engine. The other is to run accessories, i.e., air conditioning, lights, etc. Parallel wiring is also acceptable. **All lift packages will include battery maintenance system Power Pulse, 12V, and # 735X012 - or approved equal.**

Alternator: GASOLINE powered vehicles: 240 amp minimum, 12-volt, V-Belt drive or serpentine belt. Alternator shall have internal voltage regulator

DIESEL powered vehicles: Dual alternators one of 200 amps minimum, the second of 120 amps minimum, 12-volt, V-Belt drive or serpentine belt. Alternators shall have internal voltage regulator

Radiator/ Cooling: The vehicles will be equipped with a heavy duty radiator with extra cooling capacity. The cooling system shall be designed to prevent engine overheating during prolonged idling at high ambient temperatures and high humidity. Radiator tanks shall be the heaviest available from chassis manufacturer. All fittings shall be of brass or OEM.

All low points in the cooling system shall be provided with drainage. All heater hose shall be routed below floor level to ensure passenger safety. Auxiliary heater/coolant fluid shut-off valves shall be included as standard equipment

Bumpers:

Front and rear bumpers shall be standard. The vehicle shall be provided with heavy duty OEM front and rear bumpers with two recessed tow hooks of sufficient strength to tow 1 1/2 times the GVW rating of the bus.

Hooks are to be installed as per OEM to prevent damage to the bus while towing and prevent dragging on inclines. Both front and rear bumpers shall be heavy duty steel, full width.

Bumpers shall be fastened directly to the chassis frame to allow shock from impact to be transmitted directly to chassis frame. The rear bumpers will be installed using heavy duty brackets bolted to the frame or frame extension. The bumper shall be bolted directly to the bumper brackets with a minimum of eight (8) bolts – four (4) each side. The bolts shall be a minimum of 7/16" grade 8. Bumpers may not be welded to the frame. Front bumper to be OEM heaviest duty, Rear Bumper shall be black painted, 11 gau[9]e and 9 inches wide. A red and white striped reflective tape shall be applied to both the front and rear bumpers. The tape shall be 3 inches in width. The tape shall be 3M `Diamond grade' high intensity reflective tape or equal.

Exhaust Systems:

The vehicle shall be equipped with a heavy duty, corrosion resistant exhaust system which meets or exceeds FMVSS and EPA noise level and exhaust emission (smoke and noxious gas) requirements. Heavy-duty exhaust hangers shall be standard equipment and shall be bolted to the frame. Hanger U-bolt thread orientation shall be directed sideways. All altered exhaust joints shall be welded with a continuous weld.

The tailpipe shall terminate behind the left rear wheel and shall be deflected down toward the street. Tail pipe shall provide maximum ground clearance in the departure angle area. The pipe should turn immediately aft of the fuel tank and follow a straight line to the termination point at the roadside rear corner. Routing must meet Federal, State, and OEM up-fitter guidelines.

Galvanized heat shielding shall run between the exhaust and the floor of the vehicle, this shield at a minimum shall meet OEM Up-Fitter Guide requirements

Body-Structural:

Body Structure: The body structure shall be built as an integral unit adequately reinforced at all joints and corners where stress concentration may occur to adequately carry required loads and withstand road shock without deformation, cracking or other structural failure. The body shall be independently certified to meet FMVSS 220 and 221. Certifications must be included in the bid. Failure to do so will render the bid non-responsive.

Sidewalls: The side frames are constructed of a combination of 1" X 2" 16 gauge steel tubing, 11 gauge "C" channels and 11 gauge sheet steel welded on 38 inch centers or less. The longitudinal stringer above the window is constructed of 14 gauge 1" x 2" tubular steel. A 16-gauge "z" rail is welded to the bottom of the sidewall assembly for correct positioning on the floor assembly. All tubing is welded on all sides and ground smooth where needed. All components of the structure are jig welded and then mated together. They are joined by stitch welds of approximately 2" in length every 9" inches. The exterior skin is 20 gauge galvanized steel, or equivalent, which is luan laminated (or an approved process) to the interior side. The process must provide adhesion for the spray foam which is applied when the skin is mated to the side frame. The skin is placed in a vacuum jig which pulls it into conformity with the sidewall and foam is sprayed into the voids between frame members. The installation of the windows provides an additional mechanical attachment of the exterior skin to side frame. Window framing includes steel radius gussets welded on the four corners of each window. Entry door and lift door rough openings are integral parts of framing.

Roof: The roof frames are constructed of a combination of 1 1/2" X 3 1/2" 16 gauge steel tubing, forming a hat section roof bow, spaced on 18 inch centers except at the roof hatch. One roll bar of a minimum of 7-gauge steel shall be installed at the center of the roof structure and will be welded to the top of the sidewall frames. Sidewall, roof, and floor members, when welded together provide a continuous "hoop" that completely encircles the bus body. The roof is composed of a 20 gauge-galvanized skin and is joined with "z" joints, sealed with industrial grade water resistant adhesive sealant adhesive. The roof must be constructed without voids. The roof hatch is integral part of the framing.

Rear Body Panel: The rear frame is constructed of 1 1/2" x 2" 16 gauge steel tubing, and is welded to the sidewall frames, floor frame, and roof frame. Rough opening for the emergency skit out window is an integral part of the framing. The rear skin is again 20 gauge galvanized steel, bonded to the rear frame and joined vertically by sealed lap joints. The circumference of the junction of rear wall and sidewall is trimmed with a ring of molded FRP. The front portion of the roof, over the drivers area has the same 1 1/2" x 2 " 16 gauge cage as the rest of the vehicle. Front and rear end caps may be fiberglass provided there is a steel cage under these caps to insure maximum passenger safety.

All body panels (roof, sidewalls, and rear wall) shall be laminated with appropriate thickness, two-pound high-density polystyrene to provide an insulated body structure with a minimum R-5 value. An alternate method is acceptable if R-5 minimum is achieved. All methods must meet the Federal Motor Vehicle Safety Standards (FMVSS) and the Advanced Design Bus (ADB) Crash worthiness Test requirements.

All dimensions, positioning of components, clearances, etc., shall be based on adult passengers.

Any sound deadening or cushioning material between the body and the chassis must be designed and installed in such a way as to prevent the failure of such material creating a safety hazard.

All interior and exterior fiberglass reinforced plastic panels and assemblies shall meet the flammability protection requirement of FMVSS-302.

FLOOR: The entire steel floor shall be a fixture-welded structure. Steel floor structure shall be the equivalent of the following: a 2 inches x 2 inches 12-gauge steel tube perimeter with 2 inches x 2 inches and 1 inch x 2 inches 12-gauge tubular steel cross sections on 16 inches centers. Floor channel frame shall be 12 gauge steel 1 inch" x 3 1/2 inches.

The entire body steel cage frame (floor, walls, roof, ront and rear) hall be securely welded together to provide an integral one-piece body structure. Fastening of floor to roof and roof to sidewalls by any means other than welding is not acceptable.

Flooring: A floor will be provided and be constructed of minimum ¾ inch marine grade plywood, sealed with rot proofing materials. All plywood is to be treated with No-Flame, flame proofing solution or approved equal. Plywood flooring is to be supported by steel floor supports to minimize floor flexing. Floor should be securely attached to frame members or steel floor will be properly prepared for application of rubber floor covering having anti-skid properties. The entire area will be covered with rubber cement or OEM recommended material before application of floor covering. All flooring adhesive must be oil resistant. Flooring material will be transit grade quality rubber covering. Rubber flooring shall be flashed up sidewall to seat track. The entire floor area will be covered with rubber floor covering as follows:

- Not less than 1/8 inch thick smooth covering under seats; 3/16 inch ribbed covering in the aisle, driver's platform and wheelchair positions..
- At the door, the strip will be laid with ribs approximately perpendicular to center aisle.

All joints in flooring will be of the butt cut joint type, properly sealed. A white standee line will be provided across the aisle at the rear of the driver's seat. Also, the flooring shall include a fuel sender plate located in the aisle above the fuel tank. The fuel sender plate shall not be less than 12 inches x12 inches and be of diamond plate material. Such plating must be installed so as to be flush with passenger area flooring. Floor color is to be black.

Body Insulation: Insulation will be provided in sidewalls, end caps, roof, floor driver's area, and fire wall areas. Insulation shall be adequate for zero degrees Fahrenheit winters and one hundred degrees Fahrenheit summers. The insulation shall be non-formaldehyde, fire-resistant, non-hygroscopic, and resistant to fungus. Insulation shall prevent condensation and thoroughly seal bus so that drafts cannot be felt by the driver or passengers during normal operations with the passenger door(s) closed.

Manufacturer shall install spray-in-place urethane foam having an "R" value of at least 13 in all structural voids

Insulation shall not cover up switches or electrical devices and not be sprayed in wheel wells. All insulation shall meet FMVSS tests and requirements.

WHEEL HOUSINGS: Rear wheel housings are constructed of 11 gauge-galvanized steel, welded to the floor and sidewall structure. The wheel housings shall not protrude above the floor more than 15". The application of spray-in-place foam provides additional corrosion protection. Flexible black rubber fender skirts provide protection and dressing for the exterior wheel wells. Mud flaps are standard equipment for vehicles offered, front and rear.

STEPS Wells: Step wells shall be of one-piece 11gauge galvanized steel construction. Step well is to be constructed and adequately reinforced to prevent deflection or buckling under the weight of a 500 pound passenger. The sidewalls and backside are of one-piece construction of 14 gauge-galvanized steel. The step well and entry door framing are fabricated in a jig and then welded to the vehicle as one unit. Step treads will be matching material, 3/16 inch thick ribbed threads of molded rubber. Integrally molded white nosings are to be furnished on all edges including floor level. Step treads must be designed and installed to exclude or minimize any overhanging

edge, lip or trim. The vertical riser must be as flush as possible where it meets the next step tread. Lights in and above the step well will illuminate step well. All steel shall be treated for resistance to corrosion. Step well is to have first step 12 inches from ground maximum, 10" step risers maximum, and a minimum of 9 inches step tread depth. All step risers shall be uniform in width. An angled step well design is not acceptable. **Caution tape shall be on every door entrance step.**

The body shall be bolted through the sub-floor structure to the chassis frame utilizing rubber mount pads and Grade 8 7/16-14 UNC bolts torques to 60-65 ft-lbs. to hold the body to the chassis frame structure. Welding of any the body understructure to the chassis frame will not be permitted.

The entire body frame under structure of the vehicle including the joints of floor and walls or any voids is to be fully undercoated with non-flammable resin-type material, polyoleum or approved equivalent, applied at the time of manufacture of the body and the interior items are installed on the vehicle.

DOORS: The vehicle shall be equipped with a 14-gauge steel framed entry/exit door. The door shall have a full clear opening width of not less than 29 inches and a full height of not less than 80 Inches. The passenger entry door shall be located directly across from the driver at a 90 degree angle for maximum viewing of entry way. The entry door shall be fully encompassed by an integrally welded steel door surround. The complete doors surround and header shall be minimum 14-gauge steel or equivalent strength aluminum and will incorporate the step well, and be installed in the body as a single unit. The entry door shall be a two-leaf, outward opening type, and be opened by air, hydraulically or electrically.

Full length glass shall be provided for full visibility of passenger and curb area. Glass in door shall be D.O.T. certified. Plexiglas with upper glass inserts is acceptable.

Passenger door(s) shall be equipped with a locking device when closed. Door operation will be controlled by an open/close switch with red/green safety indicator lights mounted in the driver's area.

At the meeting edges of each door leaf, a 2 inches rubber seal shall be installed so that the edges form a tight overlapping seal when closed.

A padded modesty panel shall be located to the left of the passenger entry door and to the passenger side(s) of the wheelchair lift door as applicable. The panel(s) will be attached to the vehicle wall and extend only to a point where it will not interfere with the aisle.

Driver door is to have standard roll-down glass window and key lock door latch. Water channeling rain gutters must be installed above every door.

Access doors shall be provided where necessary to service transmission, engine, radiator, battery, electrical and air conditioning components.

Wheelchair Door: The wheelchair lift door shall be located on the right or curb side of vehicle and between the rear wheel and rear of the bus or located between the axles immediately behind the passenger door. Bidder shall submit diagram of possible locations with the bid. The wheelchair lift door shall be hinged with outward opening panels. The lift door shall provide 68" minimum of walk-in headroom as measured when lift is in full raised usable position. The lift door shall have 43 inches minimum clear opening width. Double doors may be acceptable upon approval by ALDOT.

The lift door(s) shall be such as not to protrude more than 2 – 4 inches past the side of the bus body. A door flush with bus body is preferred. Each door leaf shall have an exterior locking handle. If a double leaf configuration is offered, the leading door leaf must close over the trailing door leaf so that the failure of a latch will not cause the door to accidentally swing open with the vehicle in motion. Each door shall have glazed windows which will provide an appearance similar to that of the rest of the vehicle and meets all applicable FMVSS. The lift door shall be equipped with a metal safety device to hold the door securely in full open position when lift is in operation and to prevent door from coming in contact with bus body. The door will have a permanently mounted latch that will hold the door in the open position with less than 1 inch of movement. The edge of the lift door shall have a roll-stop device. Securement of the doors in the open position shall not rely on bolts or straps. For wheel chair doors mounted between the axles, a hydraulic piston may be used to secure the right-hinged door in the open position.

Design of lift door and hold-open devices shall be submitted with the bid. The wheelchair lift door shall meet all federal ADA regulations. Also, a spotlight meeting ADA requirements is to be mounted inside the vehicle approximately over the lift door capable of lighting the lift platform as well as the immediately surrounding area. An alternative to the wheelchair lift door (such as a lift mounted in the passenger entry door area) may be considered, provided such lift comply with all ADA requirements and detailed specifications, schematics, and test certifications are submitted with the bid. The lift door shall display an appropriate handicap decal not less than 9 inches x 9 inches in size.

Emergency Exits: There must be a 5-way combination roof ventilator-emergency escape hatch. The hatch shall be a Specialty Manufacturing Model #9245-G200 ProLo or equal, 23 inches x 23 inches minimum, when open and the bus is in motion, will provide fresh air inside the vehicle. Hatch shall be less than 1 inch above roof of vehicle. Hatch shall be mounted so as to eliminate drilling of holes to prevent leaking. It will also have an outside release handle. Interior release handle shall be ergonomically designed.

Two hinged emergency escape windows must be provided on each side of the passenger area of the coach. The windows shall be not less than 36 inches x 36 inches in dimension. In addition, the rear window shall also be a hinged emergency kick-out type with a minimum of 49 ¼ inches wide and 31 ½ inches high frame and interior dimensions of a minimum of 44 ¾ inches wide and 26 ½ inches high . All emergency or kick-out windows shall have positive latches. Spring-loaded retainer(s) are not acceptable.

All emergency exits shall be well marked with instructions for proper use.

Windows: All windows shall be designed and installed in compliance with FMVSS 205 and 217. The windshield is to be a fixed one-piece design, 1/4 inch tinted, laminated double density safety plate glass set in heavy rubber channels. The windshield shall be designed and installed in such a way as minimize glare from interior or exterior lights during nighttime operation. The driver's window shall be OEM standard roll up window. It shall open sufficiently to allow driver to adjust outside mirror. The side passenger windows shall be transit-type 1/8 inch tempered safety glass.

Passenger windows must open to ensure ventilation will be screened and will be designed to prohibit sliding movement of windows on sudden stops and will be free of rattles and have heavy duty locking features. A top T-Slider without screens is acceptable.

It is desired to maintain a transit type appearance and school bus windows will not be accepted. A full sliding up to down or side to side window is not acceptable.

The rear window shall also have an 11 inches x 14 inches minimum Fresnel or wide angle lens attached. All passenger windows must be safety glass with an AS-3 marking. Windows are to be dark tinted to a maximum of 31% light transmission.

All passenger windows shall be installed in black powdered or anodized aluminum frames, or equivalent. Each passenger window shall be not less than 36 inches x 36 inches in dimension. The window seal rubber must be of such quality as to resist vulcanizing to either sash or sills. Caulking around windows shall be used only as a seal, not to make up for body defects or out-of-tolerance window openings. Molding(s) will be provided above side windows to prevent rain from falling or blowing directly into window on passengers.

Lights:

Exterior Lighting: All exterior lights must comply with federal and State of Alabama requirement and include side directional signals. Plus additional round inches Weldon type lights or equal, 2 front amber, 2 rear

red, to be activated by brake pedal, and must flash when passenger door and/or lift door(s) are open.

All exterior clearance lights shall be armored or recessed. All clearance, Weldon type or equal, marker, and tail light assemblies including back up lights, shall be LED type.

Interior Lighting: The instrument panel will be indirectly lighted. The step wells will be adequately illuminated. The door step light minimum 2 foot-candle measured at step tread, will automatically engage when the door is opened. Door step lights not working automatically but turning on with outside lighting is acceptable. Adequate lighting will be provided to illuminate the aisles.

Reflectors: Reflectors shall be size, type color and location required to comply with the requirements of both FMVSS - 108 and the regulations established by the State of Alabama.

All interior materials will meet or exceed the flame spread requirements of FMVSS 302.

Seats: The driver's seat shall be transportation quality with retractable seat belt and a full range of adjustments fore and aft, high back, and with flip up arm rests.

Seat cushion and back will have spring supports and foam padding and be upholstered in transit-grade vinyl #686 Newport Ash Gray or approved equal. Seat frame and pedestal are to be covered in black paint. All standard passenger seats shall be installed with "T-Legs into wall and floor seat track. The seat track must be welded to the steel structure of the sidewalls and the floor. All seats shall be easily adjustable and removable from interior of the vehicle. All seats shall be semi-contoured, forward-facing, bench type seats. Seats are to be consistent with standard transit quality construction. School bus type seats are not acceptable. Seat frames are to be constructed of heavy duty 1 inch diameter, 16-gauge steel tubing. All seat frames are to be welded. All seats shall provide a minimum width of 17 inches per passenger, or 35 inches per two-passenger bench. Seat backs are to be 34 inches in height measured from floor to the top of the back of the seat. Back row of seats may be 16 inches. Seat spacing shall have 27 inches to 29 inches of hip-to-knee room.

All passenger seats will be forward facing and equipped with aisle-side US Arm type fold-up arm rests. Seat material shall be premium transit grade vinyl upholstery. Seats shall be padded and shall be constructed with individually removable back and bottom cushions for ease of repair and replacement. Cushions are to be removable without removing frames from bus.

Adjustable, fully retractable 90 inches adult size seat belts shall be provided for each passenger seat. Vendor will provide two (2) seat belt extensions/extenders per vehicle for use by over-sized passengers. These will be stored in a separate and permanently mounted storage bag located in the driver's area of the vehicle. All seats shall be installed with 5 nuts and bolts.

Interior Body

Paneling: Interior panels shall be of vinyl-clad aluminum, 060 Acrylonitrile butadiene styrene plastic, FRP (Fiberglass Reinforced Plastic), or melamine. A metal school bus type interior is not acceptable. Panels shall be installed such that no warping of interior materials occurs. Interior panels shall be smooth surface to allow easy cleaning. Pebbled surfaces are not acceptable. Panels shall be bonded, riveted, or welded in place. If rivets are used, they shall be well concealed. No visible fasteners in side walls will be acceptable. Interior panels shall be supported and fastened so as to prevent buckles, drumming, or flexing while the vehicle is in service. Fasteners shall be of a type that will not loosen under vibration.

Interior panels, material and treatments shall be flame retardant meeting FMVSS #302 and treated to be easily cleaned. Colors are to be off-white or a light gray.

Body side/floor joints shall be covered with cove molding flashed up to side walls, and any exposed areas, i.e., gas tank, wheel well covers, etc., shall be covered with color harmonized ABS plastic or fiberglass.

Driver Compartment: All controls, gauges, etc. must be ergonomically designed and within driver's reach. Any such controls etc. located above dash are not acceptable. A driver-side air bag is required. A smoked or clear Plexiglas panel is to be located behind the driver.

A guardrail will be provided in back of the operator, extending from the vertical stanchion to the left side of the coach 30 inches approximately 2 inches above the floor. Stanchion and panel will not impair driver's seat adjustment. The driver area shall include a 6 inches fan located such that it can be directed either at the driver or the windshield.

The fan shall also be located to be within reach of the driver and not interfere with the rearview mirror.

Grab rails/Stanchions: All grab rails and stanchions shall be not less than 1 1/4 inch outside diameter stainless steel tubing. A heavy pre-molded, energy-absorbing padding shall be glued or otherwise bonded without screws to prevent twisting/slipping to all grab rails and stanchions. All grab rails and stanchions shall be padded with BenTech Seamless Series high textured safety tubing or approved equal. Fittings shall be stainless steel, cast aluminum or equal, corrosion resistant material

with anti-rattle fittings.

An integral hard molded anti-vandal type padded horizontal grab rail shall be attached across the top of each seat with a minimum of 2 inch between the grab rail and the seat top. Horizontal grab rails will not be provided on seats whose back is positioned in front of an emergency exit window or opening. Such grab rails are accepted (not required) for back row of seats.

Grab rails on both sides of passenger entrance will be positioned so passengers will not use door-opening device for support when boarding or de-boarding the vehicle.

A heavy duty modesty panel padded on sides will be provided to the left of the passenger entry door with a floor-to-ceiling stanchion provided at the aisle.

A horizontal hand rail should extend from the stanchion to the body side wall or to another vertical stanchion in close proximity to wall. All guard rails and stanchion mountings will have reinforcement plates welded to structure behind panels of sufficient strength to withstand passenger force. Final locations shall be provided by diagram/floor plan and/or pilot model inspection.

All sharp edges, protruding fasteners, brackets, etc., that can cause injury or damage to clothing must be eliminated. All stanchions and grab rails are to be attached to structural posts or cross members of the roof to insure maximum strength. **Ceiling grab rails shall be standard.**

Safety Equipment: Warning buzzer (back up alarm) is to be a minimum 90 decibels when transmission is in reverse. Interior buzzer is to activate when door or emergency exit is open.

When equipped with a lift, a master switch with light for lift shall be at driver's station. The light at driver's station is activated when lift door is open or lift is in operation (when equipped with a lift). Also, an alarm pad is required to notify driver if specific kick-out emergency window(s) are ajar.

Emergency Equipment: The manufacturer will furnish a safety kit with the vehicle that will include the following equipment: one five pound Fire extinguisher; one industrial unit first aid kit of sufficient size to treat the number of persons equal to the designed seating capacity of the vehicle including the driver, In addition, a blood borne pathogen kit must be included.

Also, four ten inch chem-lites (2-hour minimum) with hand-held and magnetic tri-pods, and three safety triangle reflectors. The chem-lites and reflectors shall be stored in containers and all emergency equipment shall be mounted in a location easily accessible to the driver and not in

passenger area. The final location of all safety and emergency equipment will be approved by ALDOT. Two (2) seat belt cutters including mounting clips and attaching hardware shall be provided with each vehicle (shipped not installed)

Wiring/Electrical:

Wiring: All general purpose wires shall be vinyl insulated to 200 degrees Fahrenheit, shall meet SAE standards, and shall be color coded and number coded at least every eighteen (18) inches and permanently labeled to identify their function. Battery cables shall be minimum 1/0 gauge with minimum of 0.075" wall plastic insulation. All wiring shall be of sufficient size to carry the required currents without excessive voltage drop. All wiring shall be run inside the body in a protected area. All wiring shall be in a loom and securely clipped for maximum protection. Clips shall be rubber or plastic coated to prevent cutting the wiring insulation. When routing wiring under vehicle all wiring shall be encased in a loom and attached to the sub-floor with rubber or plastic coated P-clamps every 12 inches and shall not be bundled with hoses. The harness shall run in straight lines as close to the chassis frame rails as possible. Any harness that goes over the rear suspension shall be encased in a conduit fixture securely fastened to the sub-floor rails. All multi-pin connectors with 12 or more circuits shall be environmentally sealed with metal connectors and a twist lock mechanism. All connectors with 3 to 12 circuits shall be environmentally sealed high impact plastic connectors with pull apart locking tabs. All connections containing one to two circuits shall be made with Posi-Lock connectors. **NO BUTT CONNECTORS WILL BE ALLOWED.** Vehicle shall contain professionally built harnesses using color and number coded high temperature wire. Entire harness system and mating electrical components shall be plug-connected with lock tab connectors; all terminals shall be machine crimped; all harnesses shall be covered in high temp conduit and all exterior under body/under hood connectors shall be Weather-Pak connectors. **Each vehicle shall contain a set of detailed system-by-system "as built" wiring schematics for easy troubleshooting.**

Wiring in body will be in a plastic loom from power source, the component, or fixture and will be adequately protected against interference by passengers and the environment. Paper and cotton braid wrap is not acceptable. Cable in engine compartment must be insulated to protect it from engine heat. Cables and wiring will be held in place with Rubber covered clamps. All cable and wiring diagrams shall be marked to show color codes used.

Electrical devices, switches and gauges will be located such that they will not create a fire hazard during normal operation or in case of failures. All electrical motors will be readily accessible for service, including directional lights, defroster fan and door buzzer. Circuit breakers shall be on a master electrical panel and be in a readily accessible location for removal and servicing. The bus body and accessory electrical equipment shall be served by circuits separate and distinct from the vehicle chassis circuits.

All wiring provided by the bus manufacturer shall be copper and conform to all SAE

J1292 requirements. An automatic fast idle system shall be installed which will automatically increase engine RPM to approximately 1200 RPM. This fast idle shall engage when vehicle transmission is in park or neutral and the air conditioning is on and shall not come on when vehicle is in drive and service brake has been applied.

All wiring devices, switches, etc. except circuit breakers shall be rated to carry at least 125% of the maximum ampere load for which the circuit is protected. There shall be a master electrical component panel located inside the bus in a compartment over the driver's door with access from inside the bus.

Circuit breakers shall be of the automatic reset type and designed specifically for each circuit. The electrical switch panel shall be mounted within easy reach of the driver, and shall incorporate all switches including, but not limited to, the following: passenger compartment light switch, rear air conditioning switches, rear heater switches.

Back-lighted switches for night operation are preferred, however engraved, embossed, or etched are acceptable. The switch panel shall be slightly inclined toward the driver to facilitate ease of viewing and operation. Switch panel and/or switches, gauges, or controls located above the driver's head are not acceptable.

Dual heavy-duty 12-volt horns will be provided. Installation of horn will be such as to afford protection from wheel wash.

A vehicle-specific (as built) wiring schematic must be provided with each vehicle

Instruments/Controls:

THE FOLLOWING INSTRUMENTS ARE REQUIRED:

A. Speedometer with odometer
B. Oil pressure gauge
C. Master reset circuit breaker
D. OEM sun visor for driver's side, adjustable for windshield or side window.
E. Water temperature gauge
F. Fuel gauge
G. Voltmeter
H. Hazard flasher control
I. Transmission shift control
J. Parking brake valve as applicable
K. Hour meter
L. Hub-ometer (wheel hub mounted odometer)

THE FOLLOWING CONTROLS, IN ADDITION TO NORMAL STEERING, BRAKING AND TRANSMISSION FUNCTIONS, ARE TO BE PROVIDED:

A. Engine start switch (key type)
B. Engine protection system with engine shut down stop switch and incorporated engine protection override.
C. Panel illumination lamp (back lighted)
D. Head lamp switch
E. Clearance or marker lights controlled by headlight control switch
F. Defroster switch
G. Front heater switch
H. Rear heater switch
I. Driver's dome lamp switch
J. Entry door control
K. Master wheelchair lift switch (if applicable)
L. Directional signal switch
M. Wiper control switches (2-speed plus integral intermittent wiper/washer)
N. OEM AM/FM stereo radio/ Compact Disc player
O. Manual override for electric door
P. Windshield washer control
Q. Horn button
R. Interior light switches
S. Door release mechanism

All instruments and controls are to be logically grouped on a single central panel to the front of the driver and a single control panel to the left of the driver. All instruments shall be in full view of the driver with no instruments obstructed by controls, trim panels or other appurtenances and arranged in consistent and uniform manner. Any such controls mounted above the dash is not acceptable, however a pod mounted to top of dash may be acceptable.

Air Conditioning: A complete air-conditioning system shall be of a size capable of providing adequate cooling and dehumidifying capacity for driver and passenger comfort. OEM air conditioning (12,000 British Thermal Units (BTU) minimum) in driver's area. **The air conditioning system must be capable of maintaining 72 degrees F. temperature with a full load of adult passengers, with an ambient outside temperature of 95 degrees F. and relative humidity of 60% throughout the entire bus (certified verification is required from a Professional Engineer or from a certified testing facility) (ALDOT reserves the sole right to determine if the verification is accurate and appropriate and to request copies of the actual testing documentation).** There will be a free blow system to evenly distribute cool air for passengers and operator comfort. It shall be easy to operate for control and will be easily accessible to the driver with a four (4) position switch or digital control thermostat. Bidder shall furnish complete details of the air conditioning system proposed for this vehicle, including warranty and service provisions and air conditioning service vendors and warranty locations in the State of Alabama with the bid.

The air conditioning system shall have a minimum of 116,000 BTUs/Hr. output with approximately 30,000 BTUs/Hr in driver's area and 86,000 BTUs/Hr in the passenger area. The system shall utilize ozone friendly R-134A Refrigerant. Chassis supplied compressors shall be driven off vehicle engine with 9.5 C.I.D. minimum capacity. The system shall be an A/C 8623, with 1-EM3, 1-EM-14 evaporator and 1- CM2 and 1-CM3 condensers or approved equal. Alternatively the system may be an ACC FR3OFR86 with one 23035, and one 23036 evaporator, and two 25031 condensers (or 25033 condensers based on body/chassis type, or approved equal). Mud flaps shall be mounted both front and rear of condensers.

Rear mounted evaporator shall be rated at 86,000 BTUs/Hr with blower assembly rated at 2,000 CFM at high speed. Evaporators shall be three (3) speeds continuous duty permanently lubricated motors. Filters shall be washable and removable. Gal annealed heavy-duty frame and coil end panels for added durability. Integral gal annealed drain pan with dual drain valleys shall be utilized for superior condensate drain. Orifice tube design shall be used in lieu of expansion valves for improved performance and reduced maintenance.

The system shall have one or more heavy-duty skirt mounted condensers with fans and motors enclosed within condenser housing. Two fans with 14 inches fans may be used. Condensers shall be mounted flush with, and not hang below the body skirt.

Housing shall be 16-gauge gal annealed steel with powder coated flat black textured paint or E-cote epoxy coating for superior durability and resistance to corrosion. Condensers shall have a combined 154,000 BTUs/Hr. 95 degree Fahrenheit ambient rating. Condenser motors to be enclosed within housing shall each have a minimum of four (4) brushes. The coil shall be copper tube, expanded into aluminum fins. Air shall be pulled through the coil and distributed toward the center of the vehicle at an approximate70 degree angle to prevent warming of vehicle floor. Integral high/low pressure cutouts to be wired into clutch circuit. The high pressure switch shall be the resettable type and located on the condenser at an easily accessible location.

Fourteen (14) inch low profile axial fans dynamically balanced with a 4-pole permanent magnet totally enclosed motor shall be utilized. Electrical connections are to be corrosion resistant brass. Condenser fitting connections shall be 0-ring type. The filter drier will be incorporated into an accumulator assembly and will be mounted for ease of service. The accumulator will also include an oil pick-up tube to insure proper oil return to the compressors. Electrical connections are to be corrosion resistant brass.

Driver area evaporator shall be 30,000 BTU/Hr, and separately controlled from the passenger area air conditioning system. It shall include off/low/medium/high fan speeds.

The in-dash or driver's unit shall not interfere with removal or replacement of engine cover or blocked by door control mechanism. The passenger area air conditioning system shall be controlled easily from driver position.

Controls shall include off/on and three (3) speed blower switching and a rotary thermostat switch or utilize a digital key pad thermostat adjustment.

Components of the air conditioning system shall be readily accessible for maintenance.

The rear air conditioning unit will be mounted in such a fashion that all mounting hardware will attach to the bus body frame or other structural component. In no instance will any air conditioning component be mounted in such a fashion as to rely on attachment to a non structural component of the vehicle.

Refrigerant hoses shall be refrigerant type, double-braided construction, Goodyear or equal with essentially comparable standards of quality design and performance. All A/C hoses for rear system shall be routed inside the vehicle. Refrigerant fittings shall be ATC0 or approved equal. Fittings and hoses must be qualified to SAE Specification J2064. The use of Aeroquip E-Z Clip system is approved. All refrigerant hoses must be mounted with sufficient "flex" and slack (approximately 3%) so that vehicle vibrations and flexing will not place excessive strain on these hoses and fittings and cause premature failure.

All wiring must be color coded and must meet all specifications required. Any subcontractor who provides air conditioning and/or heating components must meet all specifications unless specific exceptions are granted. Bidder must certify that wiring for A/C circuits is adequate to withstand the transient loads expected. Circuits shall be protected with automatic circuit breakers or thermal relays. It is preferred that all switching be ground activated, eliminating heavy power loads in the driver area. A/C warranty shall be two years minimum with unlimited mileage.

Heating/Defrosting: The heating and defrosting system will consist of at least two (2) units, one front unit located in the driver area and one unit located in the rear of passenger area so as to uniformly heat the bus. The system shall be sufficient to maintain sixty-five (65) degrees Fahrenheit temperature throughout the vehicle while the bus is in operations with an outside air temperature of zero (0) degrees Fahrenheit. The system capacity shall provide a minimum of 86,000 BTU/Hr.

The system shall incorporate an easily accessible water cut-off valve installed underneath bus at driver door to allow water flow to rear heater to be shut off in summer.

The front unit will have one large heater core and two heavy duty blowers to provide sufficient heated air for defrosting the windshield and for bus heat.

The blower motors will be controlled by four (4) position switches on the driver's control panel off/low/medium/high, and be individually controlled from the instrument panel and within easy reach of the driver.

An additional outlet will be provided near the driver to allow heated air to the driver's area. A lever or knob will control the distribution of heated air between the defroster plenum chamber and the bus heating outlet. The control shall be located within easy reach of the driver position. The rear passenger area heater unit(s) shall be located under seats and shall not be exposed to passenger traffic. Combustion type heaters will not be permitted. The manufacturer will add required amount of permanent all-weather coolant after heaters have been connected to protect the cooling system to -25 degrees Fahrenheit tested at normal engine temperature.

Step well to include heat duct or sufficient heat to prevent icing. All heater and air conditioning lines and routing is required.

All heater water lines and heater cores shall be of heavy-duty copper except where shock absorbing or flex lines are required. All core assembly joints shall be soldered. Heater control valves shall be readily accessible and the heating system circulating pump shall be located in the engine compartment.

All blowers required for the heating and ventilating systems shall be balanced statically and dynamically.

Body-Exterior

Vehicle body shall be metal. Fiberglass or aluminum skin over fiberglass is not acceptable.

Exterior panels are to be bonded to the body as detailed in the Sidewall Section (see sidewall). Pop rivets or sheet metal screws are not acceptable for fastening the vehicle exterior panels.

The exterior sidewall of the bus shall be smooth. There shall be no exposed fasteners on the exterior of the bus body.

The sidewall and roof shall be joined at the roof gutter above or slightly below the windows. All panels shall be installed so that they will shed water; that is, the leading panel shall be lapped over the following panel and in no case shall the sealing of the panels be dependent on caulking alone.

Any bright metal exterior trim shall be stainless steel, polished aluminum, or chrome plated. Also, water channeling rain gutters shall be installed over all door and window openings.

Undercoating: The entire body frame understructure of the vehicle including skirts, shall be fully undercoated with non-flammable, resin-type materials. (Polyolieum, Ziebart, Quaker State Soundoff, Ashland Tectyl 165G, Kendall Seal n Sound or approved equal) applied at time of manufacture. Automotive quality undercoating is not acceptable.

Mirrors: Fully adjustable outside rear view mirrors are to be B&R Model 715 "A" PILLAR or approved equal driver and passenger side shall be mounted on appropriate sides of vehicle. Fully adjustable crossover type mirror shall be at left front body corner.

Each mirror shall be 6 inches by 9 inches minimum (outside measurement) in size, and will be constructed with an anodized aluminum chrome plated frame and bracket designed to be retractable to prevent damage by bus washer equipment. A convex mirror shall be mounted above both exterior side mirrors if not OEM. Stick-on type mirrors are not acceptable. Exterior side mirrors are to be remote control.

A 6 inches x 16 inches rectangular inside rear mirror will be installed for the driver's view of the bus interior. An internal rear view mirror of at least 6 inches in diameter will be mounted at the right front of the bus at the windshield headliner. All mirrors are to be mounted so as to prevent distortion from vibration.

Color: Manufacturer's standard bright white exterior. Striping is also required and is to run the approximate length of the vehicle on both sides and be 8 inches in width. Striping is to be 1 inch below passenger window. Striping will be blue, orange, green or burgundy. Stripe color will be noted at time of order.

All colors will be approved by ALDOT prior to award of bid.

Windshield Wipers: Two heavy-duty, self parking, electrically operated, with integral intermittent pulse windshield wipers will be furnished. Windshield washers with a minimum one (1) gallon reservoir will be provided. The system will be located for easy inspection, maintenance, filling and removal.

Additional
Requirements

Documentation Required with each vehicle delivered.

1. Certificate of origin (chassis and body)
2. Bill of Sale
3. Check for application for title ($15/vehicle to end user)
4. Warranty papers
5. Spare key(s)
6. Operator's manual including manufacturer's suggested service schedule/checklist.
7. All required certifications (notarized): Horsepower, Air Pollution, Vehicle Service, FMVSS, ICC, Alabama State. Law, Working and Moving parts, Service and Adjustment, Repairs, Specification Compliance, Quality Controls, Vehicle Delivery, Post Delivery Buy America Certification.
8. Vendor customer service guide including service and repair locations.
9. All quality control problems, issues, concerns, etc. have been noted by in-plant inspections and appropriately corrected.
10. Electrical wiring schematic for all components of vehicle "as built".
11. Vendor Pre-delivery inspection (PDI) Checklist.
12. Tire balancing and alignment verification.

Training: Manufacturer will provide eight (8) hours of training that will be given to two (2) representatives of agency whom the vehicle is purchased for, at the successful

bidder's expense. The training will consist of four (4) hours covering general operation of the vehicle and four (4) hours covering vehicle safety. All training will be determined by the Alabama Department of Transportation, 1100 John Overton Drive, Montgomery, Alabama, 36110.

Workmanship:

Workmanship throughout the vehicle will conform to the highest standard of commercially accepted practice for class of work and shall result in a neat and finished appearance. The design of the body and equipment which the manufacturer proposes to furnish must be such as to provide a vehicle of substantial and durable construction in all respects. An emphasis must be placed on passenger comfort and safety. Welding procedures, welding materials, and qualifications of operators will be in accordance with standards of the American Society of Testing Materials and the American Welding Society.

All welds visible to the public will be ground smooth after the welding to present a smooth, workmanlike appearance. Where metal is welded to metal, the contact surface will be free of scale, grease, paint. All exposed surfaces and edges will be neatly finished. All parts will be new and in no case will used, reconditioned or obsolete parts be accepted. Manufacturer will submit with his bid a detailed description and specifications of the frame structure, roof structure, and side sheeting, with particular reference to materials used. Any one part of whatever materials used in the construction will be an exact duplicate in manufacture and design and construction on each of the buses in the contract. Material changes due to changes in model year changes are accepted provided such changes are submitted to ALDOT upon contract renewal.

Documentation:

REQUIRED DOCUMENTS/BID ATTACHMENTS

NOTE: ALL REQUIRED ATTACHMENTS, CERTIFICATIONS, ETC, MUST BE ATTACHED TO THIS LIST AND BE IDENTIFIED ACORDINGLY

DOCUMENT REFERENCE	REQUIRED DOCUMENT
ATTACHMENT-A	COPY OF CHASSIS MANUFACTURER'S INVOICE TO BODY MANUFACTURER.
ATTACHMENT-B	QVM DOCUMENTATION
ATTACHMENT-C	IN-PLANT QUALITY ASSURANCE
ATTACHMENT-D	QUALIFICATION /STATEWIDE CONTRACTS/REFERENCES
ATTACHMENT-E	DESCRIPTION OF ACCESSORIES
ATTACHMENT-F	Bidder Certifications (FTA) **"The October 1, 2006 Federal Transit Administration Master Agreement is referenced herein this agreement between** the **State of Alabama and successful bidder."**
ATTACHMENT-G	BUS TESTING EXECUTIVE SUMMARY (10 Year 350,000 Mile Category) (COMPLETE TEST)
ATTACHMENT-H	ENGINEER DRAWING STEEL CAGE
ATTACHMENT-I	CERTIFICATION FMVSS 220
ATTACHMENT-J	49 CFR PART 571 FMVSS
ATTACHMENT-K	ISO 9001 DOCUMENTATION
ATTACHMENT-L	NO ATTACHMENT - L
ATTACHMENT-M	MFG WARRANTY PAPERS CHASSIS, BODY, ADDITIONAL EQUIPMENT
ATTACHMENT-N	DETAILED DESCRIPTION OF FRAME STRUCTURE, ROOF STRUCTURE, INCLUDING MATERIALS
ATTACHMENT-0	CERTIFICATION BUS DESIGNED, MANUFACTURED, ASSEMBLED, TESTED FOR PASSENGER USE
ATTACHMENT-P	CUSTOMER SERVICE GUIDE
ATTACHMENT-Q	FLOOR PLANS FOR EACH HAP (Include weight analysis for each)
ATTACHMENT-R	CERTIFICATION OF AFTER-MARKET ALTERATIONS BY MANUFACTURER VALIDATING ALL WARRANTIES

ATTACHMENT-S	CERTIFICATION OF HORSEPOWER OF ENGINE FURNISHED IS ADEQUATE FOR THE SPEED RANGE AND TERRAIN IN WHICH IT WILL BE REQUIRED TO OPERATE AND THAT IT WILL ALSO MEET THE DEMANDS OF ALL AUXILIARY POWER EQUIPMENT.
ATTACHMENT-T	MANUFACTURERS CERTIFICATION THAT BUS TESTED AT APPROPRPRIATE LEVEL.
ATTACHMENT-U	ASSURANCE OF WARRANTY REPAIRS
ATTACHMENT-V	PLEASE. ATTACH APROPRIATE DOCUMENTATION TO PROVE DEVIATION IS EQUAL TO OR EXCEEDS SPECIFICATIONS
ATTACHMENT-W	ENGINEERING DRAWINGS OF SECUREMENT FLOORING, TEST RESULTS

*NOTE: All certifications must be signed by an appropriate representative of the bidder or manufacturer as required and properly notarized. Failure to attach all certifications will result in the automatic rejection of the bid. Any certification subsequently found to be falsified or otherwise misrepresented may affect bid award and/or that particular vendor or manufacturer's ability to bid on future state contracts.

Tests
/Testing: The complete vehicle and all working and moving parts and operating devices will be thoroughly tested and put in operating condition by the manufacturer. Any dealer identification, advertising, or similar material will not be attached to the vehicle. Prior to acceptance of vehicle, the manufacturer will service and adjust vehicle for operation to include, as a minimum, the following:

A) Focusing of lights
B) Tuning of engine
C) Adjustment of accessories
D) Checking of electrical, braking and suspension system
E) Charging of battery
F) Inflation of tires
G) Balancing of all wheels, including spare
H) Complete lubrication of engine, chassis and operating mechanisms with recommended grades of lubricants for the ambient temperature at the point of delivery
I) Servicing of cooling system with permanent type anti-freeze and summer coolant for minus 20 degrees Fahrenheit
J) Servicing windshield washer with water and appropriate additives
K) Full tank of fuel

Warranties: The manufacturer will state the terms and conditions of the vehicle warranty. In no case will the warranty be less than the following:

- Bumper to Bumper: 12 months or 12,000 miles
- Chassis Manufacturer: 3 Years or 36,000 Miles
- ® Rear Air Conditioning Unit: 2 Years/Unlimited Miles
- Body Structural: 5 Years or 100,000 Miles
- Lamination (leaking): 3 Years or 100,000 Miles

The warranties listed above shall be considered as ATTACHMENT-M.

The bidder will state where warranty maintenance work may be obtained in Alabama ATTACHMENT-P.ALDOT reserves the right to visit, inspect, and approve such facility before final award.

Any and all materials, specialties, equipment or accessories that prove defective in normal operation within the above period will be replaced or repaired by the manufacturer free of any and all cost to the vehicle operator, including material and labor. Warranty replacement and/or repairs will be facilitated promptly by the awarded vendor. The bidder will provide written assurance with the bid package regarding warranty repairs. ATTACHMENT-U

All body parts shall be shipped in 10 calendar days or less. Other parts are to be shipped in 3 calendar days or an up-to-date status report is provided.

Delivery Schedule: The vehicle(s) shall be delivered not more than 120 days after issue date of the Purchase Order. ALDOT shall be notified immediately if there is a chassis-related problem affecting delivery. Notice of delivery shall be given not less than 24 hours prior to delivery.

Post Delivery Survey: The successful vendor shall conduct a survey of end users upon completion of the contract (delivery and acceptance of last vehicle ordered). The survey shall include (but not be limited to) product satisfaction, problems, etc. Also to be included in the survey is the contact person for the end user who has responsibility for the Preventive Maintenance Program (PMP). The PMP shall include vehicle chassis, body, air conditioning unit(s), and wheelchair lift, where applicable. In addition, the survey shall include the vendor contact person for warranty questions/issues. The end user shall also provide the vendor with a warranty responsibility contact. The survey shall be completed not less than ninety (90) days after delivery to ALDOT. The vendor shall compile survey results and supply a copy to ALDOT.

HANDICAPPED ACCESSIBILITY PACKAGES

According to the Americans with Disabilities Act (ADA),certain features are required to make a vehicle accessible to with disabilities. Those items required to make a vehicle ADA accessible are included in the various packages.

*NOTE: All accessibility packages will be oversized. The oversized or 0/S package includes;

- A lift capacity of 800 lbs. minimum. [BRAUN Model L919FIB (34"x 51") RICON Model S-2010 (34 inch x 54 inch), or approved equal.
- A third track to accommodate longer wheelchairs
- One additional 3-step foldaway type flip seat adjacent to third track may replace a row of standard bench seats
- ® F2 denotes double bench flip seat (on diagram)
- ❍ F3 denotes double 3-step foldaway flip seat (on diagram)

ADA Package (ADA -0/S 2B)

Required for urban fixed-route services, ADA Package includes:

A) Wheelchair Lift---Fully automatic, curbside. Mount between rear wheel and rear of vehicle.
B) Two forward-facing securement stations. Price to include credit for removal of standard seats.
C) One double flip bench flip seat. Flip seats shall be a deluxe model contoured to coordinate with standard seats and shall have aisle-side arm rests and seat belts.
D) One double 3-step foldaway flip seat
E) Wheelchair belt restraint storage--Such compartment shall be located so as to be easily accessible, yet not interfere with passenger traffic.
F) Priority seating signs:
   1. Each vehicle shall contain sign(s) which indicate that seats in the front of the vehicle are priority seats for persons with disabilities, and that other passengers should make such seats available to those who wish to use them. At least one set of forward-facing seats shall be so designated.
   2. Each securement station shall have a sign designating it as such.
   3. Characters on signs required by paragraphs 1 and 2 above shall have a width-to-height ratio between 3:5 and 1:1 and a stroke width-to-height ratio between 1:5 and 1:10 with a minimum character height (using an upper case "X" of 5/8 inch with "wide" upper case letters),and shall contrast with the background either light-on-dark or dark-on-light.
G) Fare box---A transit type fare box shall ~~Diamond~~ be RV with 2 vaults or equal and be mounted with trip handle located on driver's side. It shall be mounted on a stanchion, braced, and easily accessible to boarding

passengers. An amber or indirect fare box light shall be connected to dash instrument light. Two interchangeable lockable fare box vaults, keyed alike, with a double set of keys for each lock shall be supplied. Vault and fare box exteriors shall be marked with key reference: A padded grab rail shall be placed so as to assist passengers and to prevent them from falling onto the fare box and other forward areas. The bidder shall provide a description of the fare box with the bid package.

H) Destination signs --- Front and boarding side signs will be digital Whelan Model or approved equal. Adequate illumination for daytime or nighttime visibility with a minimum of 25 destination positions. Sign characters shall have a width- to-height ratio between 3:5 and 1:1, and stroke to width-to-height ratio between 1:5 and 1:10, with a minimum character height of 2 inches for front head signs. Spacing shall be not less than 1/16 the height of upper case letters, and shall contrast with backgrounds, either dark-on light or light-on-dark.

I) Public address system--Mobile page with one exterior and four interior speakers.

J) Stop request signal---A pull-cord, touch tape, or other stop request system shall be installed on both sides of the interior, to include and be adjacent to, any wheelchair securement station. The signal cords etc. will be located so they may be easily reached by passengers while not interfering with emergency exits. Such a system shall provide both auditory and visual indications that a stop request has been made. The auditory signal shall be a buzzer type, audible as long as cord is pulled. A singular, non-repetitive tone is not acceptable. Controls required by this section shall be mounted no higher than 48 inches and not lower than 15 inches above the floor, shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate controls shall be no greater than 5lbs. (22.2N)

Handicapped Accessibility Package (H.A.P.-OS/2B)

Suggested for Demand/Response systems:
(See specifications as stated above)

A) Wheelchair Lift
B) Two forward-facing securement stations
C) One double flip bench flip seat. Flip seats shall be a deluxe model contoured to coordinate with standard seats and shall have aisle-side arm rests and seat belts
D) One double 3-step foldaway flip seat
E) Wheelchair belt restraint storage
F) Priority seating signs
G) Wheelchair belt restraint storage
H) Priority seating signs

Handicapped Accessibility Package (H.A.P.- OS/4B)

Suggested for Demand/Response systems:
(See specifications as stated above.)

A) Wheelchair Lift
B) Four, forward-facing securement stations
C) One double flip bench flip seat
D) Up to 5 double 3-step foldaway flip forward facing seats
E) Wheelchair belt restraint storage
F) Priority seating signs
G) Wheelchair belt restraint storage

Handicapped Accessibility Package

This package requires as many securement stations meeting ADA regulations as appropriate for size of vehicle.
(See specifications as stated above.)

A) Wheelchair Lift
B) 8 forward-facing securement stations
C) Up to 13 double 3-step foldaway flip forward facing seats
D) Wheelchair belt restraint storage
E) Priority seating signs
F) Wheelchair belt restraint storage

*Note: This H.A.P. Special Package requires **no wheel wells** protruding above the floor. The bus will have a paratransit flat floor from side to side and from driver seat to back wall. A 6 inches riser shall be located immediately behind driver seat to the flat floor. The riser shall have a white step nosing per specifications for entry steps. The flat floor shall be constructed of 14 ga steel longitudinally on 12 inches centers from front to back on top of the standard O.E.M. floor. The beams shall be covered with one (1) inch minimum marine grade plywood, sealed on edge and bottom. Flooring material will be transit grade quality rubber flooring. Floor color is to be black.

SPECIFICATIONS of HANDICAPPED ACCESSIBILITY PACKAGES All

Handicapped Accessibility Packages must have the following features:

1. All wheelchair tie down tracks shall be reinforced below the floor by a minimum of 3 1/2 inches x 1 inch 12 gauge steel "C" channel or flat steel 11 gauge, welded to the steel sub floor.

2. All foldaway seats shall have reinforcing steel equivalent to 3 1/2 inches x 1 inch 12 gauge steel "C" channel welded to the steel sub floor below the seating position to strengthen the mounting points for these seats. In addition, the seats and seat belts must meet the requirements of FMVSS 207 and 210. Evidence that the seats were tested in the bus being bid must be submitted with the bid. All testing must be done in the bus; laboratory or bench testing is not sufficient as the bus sub floor is an essential part of the seating system.

3. Additional springs shall be installed on the rear leaf spring packs of lift equipped vehicles with a GVWR less than 15,000 lbs to offset the weight of the lift when it is deployed. This requirement will not apply to vehicles over 15,000 lbs as the rear springs on these vehicles are sufficient to handle the weight of the deployed lift without the addition of extra springs.

NOTE: Bidder must include engineering drawings of the vehicle floor showing extra steel to support the wheelchair securement area and third track as well as extra suspension for those vehicles to be ordered with accessibility packages as applicable to the specifications listed above. ATTACHMENT W.

AVAILABLE ACCESSORIES

The following equipment, when specified will be furnished. A separate price list will be provided for all accessory equipment. Such accessory items will be a part of the bid specifications.

*NOTE: Bidder is responsible for furnishing required equipment to enable the vehicle to meet or exceed the specified GVWR when accessory equipment is requested

The award of the contract will be based on the base price of the vehicle plus options/accessories and the lowest responsive/responsible bid and considerations as listed in the terms/conditions of bid.

Also, bidder must include with the bid, floor plans for each accessibility package for each size vehicle unless otherwise

*NOTE: ATTACHMENT-Q.

The bidder shall offer both Carrier and ACC Climate Control rear air conditioning systems as long as air conditioning requirements are met. All lift, securement and air conditioning choices shall be made by the end user at the time of order as long as requirements are met.

HANDICAPPED ACCESSIBILITY PACKAGES (HAP)

According to the Americans with Disabilities Act (ADA), certain features are required to make a vehicle accessible to persons with disabilities. Those items required to make a vehicle ADA accessible are included in the various packages.

Wheelchair Lifts:
(1) Braun Model #1919 IFB (34" X 51")
(2) Ricon Model #S-2010 ADA (34"x54")
(3) or approved equal

Securement packages (includes shoulder and lap belt):
(1) Kinedyne #AL712S-4C L
(2) Q-Straint #Q-8300-A1T-L
(3) or approved equal

ADDITIONAL OPTIONS

Donation Box:

16gauge metal 8 inches H x 4 inches W x 6 inches D, locking with 2 keys to include padded stanchion attachment. Diamond #DM1 or approved equal.

Advertising Package:

A) Exterior Advertising Brackets-vendor to include options for number and location of brackets with the bid. Brackets shall include three permanent sides and one detachable side. The brackets shall be mounted from immediately below the stripe and be the largest appropriate size.*2/SIDE,1/REAR Specify size of brackets per vehicle.

B) Interior Advertising Brackets (one row both sides of bus at wall/ceiling joint)*Specify size of brackets per vehicle.

Battery Maintenance System:

(Power Pulse 12V #735X012-or approved equal, one each per battery)
***This is included in lift packages.**

Air Suspension Driver Seat (Cloth Option)

Air Suspension Driver Seat (Vinyl Option)

Brake Retarder

(TELMA electric system, Model CC100, or approved equal)

Wiring Kit for 2-way Radios

Destination signs (see ADA pkg above)

Sonar Type
Back-up Alarm:
(Hindsight #300 or approved equal-Addition to Standard)

MOR/RYDE RLS or approved equal rear suspension system

Vehicle Lettering:
'Public Transportation' on front/rear end caps, plus Agency name/telephone on sides. For 5307-5311 Grantees. All lettering must be 6 inches and centered.

Vehicle Lettering:
Agency name/telephone on sides. For 5309-5310 Grantees. All lettering must be 6 inches and centered.

Street Side Exhaust System

Trolley Illusion
Kit: This option is a 3M vinyl material that is wrapped around the bus to make it look like a real trolley. (includes colored vinyl side panels, striping & scrolls) Color: Blue, Green, Burgundy, Dark Red

Integrated Child/Companion Seat

Upgrade to ALTRO Safety Flooring

Surveillance System:

A) Black/white
B) Digital Video Recorder-shall be lockable and tamper proof
C) Minimum 20 frames/second
D) 720 x 486 pixels NTSC or equal
E) Two Camera, split screen
F) Lux of 0.1 Or better with infrared LED
G) Housing unit with security lock
H) 24 hr record time
I) Day, Date, Time imprints
J) Built-in microphone
K) Operation--auto-on at ignition
   1. auto-off at ignition kill or 30 inches after
   2. no external flashing light

L) Hard Drive--30G min with back-up and be removable

M) Power--12V DC Source
   1. 16g wire min
   2. internal surge protection

N) Other Features--ability to download images to PC ability to printie mail images --programmable timers